

Method of Displaying Graphics on a Container

Background of the Invention

1. Field of the Invention

5 [0001] The present invention relates to a method of displaying graphics on a container, in particular a container comprising a non-uniform conformation portion.

2. Description of the Related Art

10 [0002] A first technique for displaying graphics on a container is to apply the graphics to the container by printing the graphics directly onto a surface of the container.

15 [0003] A second technique for displaying graphics on a container is to apply the graphics onto a label which is then secured to a surface of the container.

20 [0004] When utilising these techniques for displaying graphics on a non-uniform conformation portion of a container, complications are encountered due to the variation in the profile thereof.

Brief Summary of the Invention

25 [0005] According to a first aspect of the present invention, there is provided a method of displaying graphics on a conformation portion of a container, said conformation portion having a non-uniform cross-section therethrough, said method comprising the steps of a) arranging graphics with respect to a planar covering for said conformation portion, said

graphics comprising graphics in distorted proportion to compensate for non-uniformity of said conformation portion, and b) performing a process of application in which said planar covering is applied to said conformation portion such that said graphics in distorted proportion appear in normal proportion.

[0006] According to a second aspect of the present invention, there is provided a planar covering for a conformation portion of a container, said conformation portion having a non-uniform cross-section therethrough, said planar covering comprising graphics in distorted proportion to compensate for non-uniformity of said conformation portion, whereby said graphics in distorted proportion are arranged to appear in normal proportion following a process of application of said planar covering to said conformation portion.

Brief Description of the Several Views of the Drawings

Figure 1 shows a container comprising a non-uniform conformation portion;

Figure 2 shows a planar covering for application to the container shown in *Figure 1*;

Figure 3 shows graphics of the planar covering shown in *Figure 2* in further detail;

Figure 4 shows the planar covering shown in *Figure 2* applied to the container shown in *Figure 1*.

Written Description of the Best Mode for Carrying Out the Invention

Figure 1

[0007] *Figure 1* shows a container comprising a non-uniform conformation portion. In this example, the container is a bottle **101**. Bottle **101** comprises first and second non-uniform conformation portions **102**, **103** respectively, a bottom portion **104** with a closed bottle bottom, and a top portion **105** with an open bottle top.

[0008] The first and second conformation portions **102**, **103** each have a non-uniform cross-section therethrough. For example, observing the change in cross-section perpendicular to centre-line **106** through bottle **101**, moving along centre-line **106** through each of the non-uniform conformation portions **102**, **103**; first conformation portion **102** has a substantially spherical bulge shape and second conformation portion **103** has a substantially truncated cone shape. The cross-section of first conformation portion **102** having the maximum radius is indicated by line **107**, and this indicates the radius of the substantially spherical shape of this non-uniform conformation portion **102**.

Figure 2

[0009] *Figure 2* shows an example of a planar covering for bottle **101**, comprising graphics to be displayed on bottle **101**. In the illustrated example, the planar covering is initially a substantially rectangular planar covering **201** arranged such that following a process of application of the covering **201** to bottle **101**, the planar covering **201** is secured around bottle **101** and is substantially wrapped around each of the three portions **102**, **103**, **104** between the top and the bottom of the bottle **101**; the planar covering **201** following the conformation contour thereof. As shown in *Figure 2*, planar covering **201** comprises graphics **202** arranged with

respect to planar covering **201**, in a region indicated and enclosed by dotted line **203**, such that following the process of application of planar covering **201** to bottle **101**, graphics **202** are positioned and displayed on first non-uniform conformation portion **102**. According to this illustrated example, graphics **202** are arranged to substantially cover non-uniform conformation portion **102**.

Figure 3

[0010] *Figure 3* shows graphics **202** in further detail. Graphics **202** is arranged such that following the application of covering **201** to bottle **101**, graphics **202** displayed on first conformation portion **102** represents a football having regular hexagonal and regular pentagonal football sections.

[0011] As shown, graphics **202** in the region of planar covering **201** enclosed by dotted line **203** comprises a plurality of hexagonal and pentagonal football section representations **301** arranged in a 2-dimensional format. Due to the shape of first conformation portion **102**, graphics **202** comprises graphics, for example graphics **302** in region **303**, in distorted proportion to compensate for non-uniformity of first conformation portion **102**. In this example, graphics **202**, prior to the application of planar covering **202** to bottle **101**, comprises football section representations, for example football section representation **304**, that have a non-regular shape; in this example, non-regular hexagonal or pentagonal shape.

[0012] Planar covering **201** is arranged to be applied to bottle **101** such that the longitudinal centre-line **305** through graphics **202** is aligned with the line **107** shown in *Figure 1*, indicating the radius of the substantially spherical

shape of first conformation portion **102**. It can be seen from *Figure 3* that the football section representations **301** lying on centre-line **305** are regular in shape. Moving away from centre-line **305** in a direction perpendicular thereto, it can be seen that the greater the distance from the centre-line **305**, the more irregular the shape of the football section representation **301**. Thus, graphics **202** is arranged such that there is an increase in degree of distorted proportion as the distance from centre-line **305** increases. This corresponds to the increase in curvature of the first conformation portion **102** as the perpendicular distance from the circumferential line **107** increases. Since, in this example, the shape of non-uniform conformation portion **102** is substantially regular, the change in degree of distorted proportion of graphics **202** is substantially mirrored about centre-line **305**. Thus, graphics **202** in distorted proportion comprises different degrees of distorted proportion.

Figure 4

[0013] *Figure 4* shows planar covering **201** applied to bottle **101**. It can be seen that following application of planar covering **201** to bottle **101**, graphics **202** now displayed on non-uniform conformation portion **102** appear in normal proportion; taking into account normal perspective. Thus, referring to the region of planar covering **201** for conformation portion **102** only of bottle **101**, the graphics in distorted proportion arranged with respect to the planar covering are arranged to appear in normal proportion following a process of application of the planar covering to the non-uniform conformation portion.

[0014] For example, previously irregular football section representation **304**, appears regular and in normal proportion following the application of

covering 201 to bottle 101. Thus, relative proportions of graphics 202 in distorted proportion are adjusted during the process of application of the covering 201 to bottle 101. As shown in *Figure 4*, the result of the process of application is that the 2-dimensional distorted proportion representation of a football appears in a 3-dimensional shape in normal proportion.

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[0015] An application process in which a degree of shape regularity or shape irregularity is removed is utilisable. An application process in which the degree of this effect varies with the profile of the non-uniform conformation portion is utilisable. Thus, the aforementioned variation in degree of distorted proportion of graphics 202, to compensate for different degrees of non-uniformity of first conformation portion 102, is similarly relevant to graphics in distorted proportion to compensate for a process of application. In this way, an effect of a process of application on graphics to be displayed on a non-uniform conformation portion of a container can be compensated.

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[0016] An example of a process utilisable in the process of application is shrink-wrapping. For example, a planar shrink-wrap container covering having graphics applied thereto, for example by a printing process or other process suitable for affixing the graphics to a surface of the planar covering, is utilisable to display graphics, initially in a 2-dimensional form, on a 3-dimensional container having a non-uniform conformation portion.

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[0017] Graphics of the type described herein, having graphics in distorted proportion, are arrangeable with respect to a planar covering to be applied to any shape or form of non-uniform conformation portion of a container. For example, the perimeter of a cross-section through a non-

uniform conformation portion, perpendicular to a centre-line or other axis through the conformation portion, may define any regular or irregular shape, polygon or closed curve.

- 5 **[0018]** The container to which the planar covering is applied may be made from any suitable material, for example from plastic, glass or aluminium. The planar covering with respect to which the graphics in distorted proportion are arranged may be of a single or multilayer form. Thus, the graphics to be displayed on a container may be arranged with respect to
- 10 an outer, inner or interleaved layer of the planar covering, or may be formed or contained within the planar covering. The graphics may be entirely or partially joined with the planar covering prior to the process of application or may be joined together during the process of application. The planar layer may be fabricated from plastic or any other material shapeable during a
- 15 process of application. According to an alternative arrangement of planar covering and graphics to be displayed on a container, the planar covering is arranged to substantially cover a non-uniform conformation portion of a container whilst the graphics are arranged to partially cover the same non-uniform conformation portion. According to a further alternative
- 20 arrangement of planar covering and graphics carried thereby, both the planar covering and the graphics are arranged to partially cover the same non-uniform conformation portion. Thus, a planar covering of any shape is utilisable to carry graphics to be displayed on a container.